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**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program.	Rulemaking 11-05-005 (Filed May 5, 2011)

PACIFICORP'S (U 901-E) 2014 OFF-YEAR SUPPLEMENT TO ITS 2013 INTEGRATED RESOURCE PLAN

**PUBLIC VERSION
(Attachment B Partially Redacted)**

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Date: July 15, 2014

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Pursuant to the *Assigned Commissioner's Ruling Identifying Issues and Schedule of Review for 2014 Renewables Portfolio Standard Procurement Plans,* issued March 26, 2014 (Ruling), PacifiCorp, d/b/a Pacific Power (PacifiCorp or Company) (U 901-E) respectfully submits this 2014 Off-Year Supplement to its 2013 Integrated Resource Plan (2014 Off-Year Supplement), attached hereto as Attachment A. For informational purposes, PacifiCorp is also providing a link to its 2013 Integrated Resource Plan (2013 IRP), filed April 30, 2013 and its 2013 IRP Update, dated March 31, 2014. Both documents are available at the following link: http://www.pacificorp.com/es/irp.html. In addition, PacifiCorp provides information related to safety considerations and information and responses related to its Renewable Net Short (RNS).

I. INTRODUCTION

As noted in the Ruling, SB 2 1X[1] continues the ability of a multi-jurisdictional utility (MJU), such as PacifiCorp, to use an IRP prepared for regulatory agencies in other states to satisfy the renewables portfolio standard (RPS) procurement plan requirement, so long as the IRP complies with the requirements specified in Pub. Util. Code § 399.17(d).[2] Under the prior RPS program, in D.08-05-029 (SMJU Order), the Commission authorized PacifiCorp to use its

[1] SB 2 1X (Simitian, Stats. 2011, ch.1).
[2] Ruling, p. 7.

IRP, as supplemented with annual filings, to fulfill the requirement to prepare a renewable energy procurement plan.[3] The Commission required MJUs to file IRPs in years in which IRPs were filed in other jurisdictions as well as file certain supplemental information. The SMJU Order directed MJUs to file supplements in years in which the IRP is filed (on-year supplement) as well as years in which an IRP is not filed (off-year supplement).[4] The on-year supplement was to include an analysis of how the IRP and supplement comply with the requirements set out in former § 399.17(d).[5] The off-year supplement was to address the year ahead and include certain summary information specified in the SMJU Order.[6] Accordingly, the Company filed its 2013 IRP in this docket on April 30, 2013, when the IRP was filed in other jurisdictions. Consistent with the SMJU Order, the Company subsequently filed its 2013 IRP On-Year Supplement on May 30, 2013. Now, consistent with the SMJU Order and Ruling, the Company is filing its 2014 Off-Year Supplement.

Under the Ruling, PacifiCorp is directed to file its 2014 Off-Year Supplement with an explanation of how the IRP and supplement meet the requirements of § 399.17(d).[7] As such, PacifiCorp provides below additional background information on its IRP and planning processes, how the 2013 IRP and 2013 IRP Update relate to California RPS compliance, and how the 2013 IRP and 2013 IRP Update comply with the requirements of § 399.17(d). Supplemental information needed to meet the requirements of § 399.17(d) is included in PacifiCorp's 2014 Off-Year Supplement, provided as Attachment A. Pursuant to the May 21, 2014 *Administrative Law Judge's Ruling on Renewable Net Short* (RNS Ruling), PacifiCorp is providing its RNS

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[3] *See* D.08-05-029, p. 17; *see also* D.08-05-029, Ordering Paragraph 10 and D.11-04-030, Ordering Paragraph 4.
[4] *See*. D.08-05-029, p. 20.
[5] *Id*.
[6] *Id*.
[7] Ruling at 7.

calculation as part of its 2014 Off-Year Supplement, provided as Attachment B. Additionally, in compliance with Section 6.9 of the Ruling, PacifiCorp is providing RPS procurement information related to cost quantification in Attachment C.

II. INTEGRATED RESOURCE PLANNING

PacifiCorp is an MJU providing electric retail service to approximately 1.8 million customers in California, Idaho, Oregon, Utah, Washington, and Wyoming. Of those customers, approximately 45,000 are located in Del Norte, Modoc, Shasta, and Siskiyou counties in northern California.

PacifiCorp's owned-generation portfolio is a mix of assets located within nine western states (Arizona, California, Colorado, Idaho, Montana, Oregon, Utah, Washington, and Wyoming). Consistent with a long-standing regulatory practice agreed to among the various state commissions regulating PacifiCorp, all energy produced by PacifiCorp-owned resources, as well as purchased energy delivered pursuant to power purchase agreements, is referred to as "system" power. System power is electricity that is not assigned by PacifiCorp for use within a particular state or Balancing Authority Area and is managed on a system-wide basis. PacifiCorp combines all of the costs for generating and maintaining the appropriate level of power within the system and allocates to each jurisdiction its proportionate share of system resources based upon each state's relative contribution to system peak and energy requirements. PacifiCorp's California retail customers contribute slightly less than two percent of PacifiCorp's system requirements.

As a result of this shared resources approach, customers within PacifiCorp's states benefit from cost savings associated with system diversification. Consistent with its operations, PacifiCorp plans on a system-wide basis, ensuring that planning activities capture the system diversification benefits for PacifiCorp's California customers. As part of its planning efforts, PacifiCorp ensures that state RPS requirements will be met, leveraging system-wide resources as applicable.

The majority of PacifiCorp's owned renewable resources are eligible and certified for California's RPS program. As described above, the allocation methodology allocates approximately two percent of the costs and renewable energy credits (RECs) of those resources to California for RPS compliance purposes. The remaining costs and RECs associated with renewable resources are, for the most part, allocated to PacifiCorp's other five jurisdictions.

III. ANALYSIS

The following analysis provides an explanation of how PacifiCorp's 2013 IRP and 2013 IRP Update meet the requirements of Pub. Util. Code § 399.17(d), which requires PacifiCorp to maintain compliance with Pub. Util. Code § 399.13, § 399.14, and § 399.25. Supplemental information is provided in Attachments A, B and C.

A. Section 399.13

Section 399.13 sets forth the requirement directing each utility to annually prepare a renewable energy procurement plan that is consistent with the goal of increasing California's reliance on renewable energy resources. In general, PacifiCorp's IRP process complies with the requirements of § 399.13 by considering and incorporating the acquisition of significant renewable resources as a part of PacifiCorp's long-term procurement strategy, among other things. PacifiCorp has actively pursued and will be pursuing the required amounts of renewable resources to achieve RPS compliance in California and other states. Typically, resource acquisition is conducted through competitive bidding processes and a request for proposal (RFP) process.

Renewable resources identified in PacifiCorp's 2013 IRP and 2013 IRP Update include planned acquisition of renewable resources and unbundled RECs. PacifiCorp intends to meet the California RPS program requirements with: 1) existing eligible renewable energy procured within PacifiCorp's system, consistent with PacifiCorp's integrated system planning for its multi-state service territory and overall system operation; and 2) with unbundled RECs procured through the issuance of RFPs seeking current-year or forward-year vintage unbundled RECs that will qualify for California RPS obligations. See PacifiCorp's 2013 IRP Volume I, Chapter 9, Action Plan (p. 245[8]). PacifiCorp's renewable strategy in the 2013 IRP Update is consistent with that in the 2013 IRP. See PacifiCorp's 2013 IRP Update Chapter 6, Action Plan Update (p. 70).

PacifiCorp's 2013 IRP and 2013 IRP Update provide a thorough multi-year assessment of future resource options and forecasted demand to determine the optimal mix of renewable energy resources considering RPS compliance requirements and other state-specific resource policies and constraints. A detailed description of PacifiCorp's resource assessment and modeling approach can be found in Chapter 7 (pp. 157-200) of the 2013 IRP with the results outlined in Chapter 8 (pp. 201-241). Specifically, the 2013 IRP contains a robust assessment of supply and demand from 2013 through 2032, focusing on the first 10-year period, 2013 through 2022, by optimizing its system energy resource portfolio through the IRP twenty year planning horizon.

PacifiCorp's 2013 IRP Update describes resource planning and procurement activities that occurred subsequent to filing of the 2013 IRP and provides an updated resource plan taking into consideration changes to the planning environment. See Chapter 4 Modeling Assumptions Update (pp. 39-43) and Chapter 5 Portfolio Development (pp. 45-67) for further discussion. The updated assessment in the 2013 IRP Update continues to support the use of owned renewable

[8] Unless otherwise noted, all page references are to Volume I of the 2013 IRP.

generation in combination with unbundled RECs to meet the California RPS renewable requirements. The 2013 IRP Update, p. 46, provides: "PacifiCorp's experience in the REC market leads it to believe that it is unlikely it will be unable to purchases sufficient tradable RECs to cover its Washington and California RPS compliance obligations."

B. Section 399.13(a)(2)

Section 399.13(a)(2) requires that every electrical corporation that owns electrical transmission facilities shall annually prepare, as part of the FERC Order No. 890 process, and submit to the Commission, a report identifying any electrical transmission facility, upgrade, or enhancement that is reasonably necessary to achieve the RPS procurement requirements of this article. Chapter 4 (pp. 55-77) of PacifiCorp's 2013 IRP and Chapters 4 and 6 of the 2013 IRP Update includes detailed background, status and schedule information for PacifiCorp's transmission expansion plans. Further information on transmission planning is provided in Attachment A, section 2 of the 2014 Off-Year Supplement.

C. Section 399.13(a)(5)(A)

Section 399.13(a)(5)(A) requires an assessment of annual or multiyear portfolio supplies and demand to determine the optimal mix of eligible renewable energy resources with deliverability characteristics that may include peaking, dispatchable, baseload, firm, and as-available capacity.

Chapters 5 (pp. 79-105) and 6 (pp. 107-155) of PacifiCorp's 2013 IRP provide a thorough multi-year assessment of portfolio resource need and forecasted demand to determine the optimal mix of renewable energy resources. The resource options are outlined in Chapter 6 (pp. 107-155) and Chapter 8 (pp. 201-241) and provide the renewable requirement by year to meet California's RPS obligations. Also see Chapter 5 of PacifiCorp's 2013 IRP Update for the annual renewable requirement needed to meet California's RPS obligations. Specifically, the 2013 IRP contains a robust assessment of supply and demand from 2013 through 2032, focusing on the first 10-year period, 2013 through 2022, by optimizing its system energy resource portfolio through the IRP twenty year planning horizon. Chapter 7 (pp. 157-200) of the 2013 IRP includes a detailed description of PacifiCorp's IRP modeling approach, which PacifiCorp uses to identify the optimal mix of renewable energy resources. Figure 8.32 (p. 233) of the 2013 IRP depicts the breakdown of resource mix and illustrates how PacifiCorp plans on meeting its California RPS compliance obligation through 2022. Due to lower load forecasts in the 2013 IRP Update as compared to the forecasts in the 2013 IRP the need for new resources is pushed out in time. Figure 5.1 (p. 49) in the 2013 IRP Update shows how PacifiCorp plans to meet California RPS obligations. Additional information on how PacifiCorp assesses renewable resources and on renewable resource procurement that PacifiCorp intends to use to satisfy its RPS procurement requirements in its 2013 IRP and 2013 IRP Update is contained in Attachment A, section 3 of the 2014 Off-Year Supplement.

D. Section 399.13(a)(5)(B)

Section 399.13(a)(5)(B) requires an assessment of certain potential compliance delays. Chapters 6 (pp. 107-155) and 7 (pp. 157-200) of the 2013 IRP generally describe PacifiCorp's approach to modeling and risk assessment. The 2013 IRP also describes how PacifiCorp anticipates using banked RECs and unbundled RECs to meet its RPS requirements (Chapter 7 Modeling Approach, pp. 186-187). This strategy did not change in the 2013 IRP Update (Chapter 5 Portfolio Development, p. 46). Additional information regarding potential issues that could delay PacifiCorp's RPS compliance and PacifiCorp's efforts to minimize any delay is included in Attachment A, sections 4 and 5 of the 2014 Off-Year Supplement.

E. Section 399.13(a)(5)(D)

Section 399.13(a)(5)(D) requires a status update on the development schedule of all eligible renewable energy resources currently under contract. A status update on the development schedule of the resources reported in the 2013 IRP On-Year Supplement filed in May 2013 as well as new resources since the date of that filing is included in Attachment A, section 4 of the 2014 Off-Year Supplement.

F. Section 399.13(a)(5)(F)

Section 399.13(a)(5)(F) requires an assessment of the risk that an eligible renewable energy resource will not be built, or that construction will be delayed, with the result that electricity will not be delivered as required by the contract.

Chapter 9 (p. 264) of the 2013 IRP includes an acquisition path analysis that specifies contingency strategies tied to significant changes in resource planning conditions. Procurement delay risks are also addressed in Chapter 9 (p. 268) of the 2013 IRP. Further details on core case analysis, the planning and risk modeling, and the case study fact sheets used for the core case studies and sensitivity case studies are provided in Volume II of the 2013 IRP, Appendices K (pp. 153-266), L (pp. 267-287), and M (pp. 289-353), respectively. These contingency strategies should adequately cover potential contract failures, procurement delays, and increased resource need resulting from such regulatory trigger events as new RPS and greenhouse gas mitigation rules. Additional information regarding how PacifiCorp assesses risk of failure to build or construction delays and how the risk assessment impacts PacifiCorp's net short position and procurement decisions is included in Attachment A, sections 5 and 6 of the 2014 Off-Year Supplement.

G. 399.13(a)(5)(A), (B), (D), and (F)

In addition to the above qualitative requirements, sections 399.13(a)(5)(A), (B), (D), and (F) require certain quantitative information.

Though not referred to as "procurement net short" position in PacifiCorp's 2013 IRP, an assessment of PacifiCorp's RPS portfolio needs and compliance position in each state that has renewable portfolio standards is included in the 2013 IRP. Through its IRP process, PacifiCorp assesses its compliance and "net short" position in all states that have RPS requirements. A summary of the approach and assessment is provided in Chapter 7 (p. 186) and 8 (pp. 201-241), and a summary of the assessment is provided in Figure 8.32 (p. 233) of the 2013 IRP. This assessment is updated in Chapter 5 of the 2013 IRP Update, see pp. 47-50. Table 5.2 (p. 48) provides the annual renewable requirements by state through 2032, while Figure 5-1 graphically shows how resources will be used to meet the California RPS requirement.

Additionally, in accordance with the RNS Ruling, PacifiCorp is providing a physical RNS calculation and an optimized RNS calculation using the standardized RNS reporting template, included as Attachment B.

H. Section 399.14

Section 399.14 sets forth the requirements for an application by an electrical corporation to construct, own and operate an eligible renewable energy resource. Information regarding PacifiCorp's compliance with this requirement is included in Attachment A, section 7 of its 2014 Off-Year Supplement.

I. Section 399.25

Section 399.25 provides the requirements for the California Energy Commission to certify eligible renewable resources and design a system for tracking and verifying the renewable energy and renewable energy credits. Information regarding PacifiCorp's compliance with this requirement is included in Attachment A, section 8 of the 2014 Off-Year Supplement.

IV. SAFETY CONSIDERATIONS

The Company is committed to promoting the health, safety, comfort and convenience of customers and the public at large. Indeed, safety for PacifiCorp employees, customers, and stakeholders is one of PacifiCorp's six core principles. PacifiCorp has developed and implemented various programs to help customers, employees, and stakeholders understand their own personal safety. In 2012 PacifiCorp received Prestigious Member Recognition from the National Safety Council for holding safety as a core value and making safety a priority in business. In 2013 PacifiCorp received the Occupational Excellence Achievement Award from the National Safety Council for working to reduce on the job injuries.

The Company complies with all applicable safety codes, including, but not limited to, the National Electric Safety Code, the Occupational Health and Safety Act, and any applicable state health and safety act requirements, at all of its generation facilities, including generation facilities that are used to comply with California's RPS program. Certain safety codes may also be applicable to the operation of the Company's transmission and distribution facilities. PacifiCorp has developed standards that meet or exceed the National Electrical Safety Code. Employees are trained in work practice regulations along with Company construction standards to the highest standards and consistency.

The Company satisfies some of its RPS compliance obligation through non-utility owned generation. The Company includes safety provisions and standards in its contracts with the RPS-eligible resources. This includes mandatory compliance requirements for the seller for all applicable prudent electrical practices, including all safety standards, safety requirements for plant visits, and requirements to comply with all applicable laws and regulations, including those relating to safety.

The Company also works to develop teamwork to mitigate safety risks and has developed and implemented programs to continue improvement in safety. In addition, the Company continuously communicates safety goals in order to stay consistently on message across the organization. These programs include training and communicating from the top down, consistently delivering the same safety message and programs to all locations, and auditing the communications and programs. The Company sends daily emails to all of its employees noting accident reports and containing general reminders about safety. Other examples of the Company's commitment to safety include: periodic emails with general safety tips for workplace and personal safety, safety committees for each floor of its corporate offices and field offices, annual safety training requirements which are linked to each employee's performance review, daily hazard assessment meetings for field offices, and annual evacuation drills.

The Company prioritizes safety, not only with regard to California's RPS program, but for all resources and to the benefit of all employees, customers, and stakeholders.

V. COST QUANTIFICATION

Pursuant to the Ruling, PacifiCorp is directed to include information related to cost quantification (Section 6.9 of Ruling) in its 2014 RPS Procurement Plan.[9] As directed in the Ruling, PacifiCorp coordinated with the Commission's Energy Division Staff and has utilized the excel template provided by Energy Division Staff to provide information related to cost quantification. PacifiCorp has populated the template and followed Staff's instructions to follow

[9] PacifiCorp files an IRP in lieu of filing an RPS Procurement Plan. PUC Section 399.17 continues the ability of a multi-jurisdictional utility such as PacifiCorp to use an IRP prepared for regulatory agencies in other states to satisfy the annual RPS Procurement Plan requirements.

the template format, to the extent possible.[10] The information related to cost quantification is included as Attachment C.

VI. RENEWABLE NET SHORT

Pursuant to the RNS Ruling, PacifiCorp provides the following responses to questions posed in Appendix D of the RNS Ruling. PacifiCorp's RNS calculation and position is also described in greater detail in Attachments A and B.

A. RPS Compliance Risk

1. How do current and historical performance of online resources in your RPS portfolio impact future projections of RPS deliveries and your subsequent RNS?

The current and historical performance of PacifiCorp's online resources in its RPS portfolio is periodically reviewed to assess whether historical performance might be used to adjust forecasted performance. Historically, such reviews have not supported modifications to forecasted performance, and therefore, historical performance has little to no impact on its future projections of RPS deliveries and subsequent RNS.

2. Do you anticipate any future changes to the current bundled retail sales forecast? If so, describe how the anticipated changes impact the RNS.

For RPS planning, PacifiCorp is relying on the load forecast included in the 2013 IRP Update. The RNS table included in Appendix C of the 2013 IRP Update is a 10-year projection. Although forecast information is always subject to change and is unlikely to perfectly match actual future loads, the 2013 IRP Update forecast makes use of the best information currently available. If the actual retail sales observed are less than the forecast, the need for RECs will fall. Conversely, if the actuals are above the forecast, there will be an increased need for RECs.

[10] A cost forecast for utility owned generation is not available and therefore the company has provided forecast cost information only for purchase power agreements.

PacifiCorp will procure the needed RECs as appropriate to continue to satisfy its RPS procurement obligations. This strategy will ensure that changes in retail sales will not impact PacifiCorp's ability to meet its RPS procurement obligations or impact its RNS.

3. Do you expect curtailment of RPS projects to impact your projected RPS deliveries and subsequent RNS?

PacifiCorp does not expect curtailment of RPS projects to impact its projected RPS deliveries and subsequent RNS. As described in its 2013 IRP and 2013 IRP Update, PacifiCorp procures RECs from a number of RPS facilities. Accordingly, curtailment of any one facility is unlikely to have a major impact on PacifiCorp's RPS deliveries and subsequent RNS.

4. Are there any significant changes to the success rate of individual RPS projects that impact the RNS?

Currently, there are no significant changes to the success rate of individual RPS projects that impact the RNS.

5. As projects in development move towards their COD, are there any changes to the expected RPS deliveries? If so, how do these changes impact the RNS?

Currently, there are no specific projects in development that have changes to their expected RPS deliveries. Accordingly, there is no impact to PacifiCorp's RNS.

B. RECs above the Procurement Quantity Requirements (PQR)

6. What is the appropriate amount of RECs above the PQR to maintain? Please provide a quantitative justification and elaborate on the need for maintaining banked RECs above the PQR.

When procuring RECs, PacifiCorp will seek to minimize the amount of RECs above its PQR and only intends to procure sufficient RECs to meet its RPS requirements. This will help minimize costs and maximize value of procured RECs to PacifiCorp's customers.

7. What are your strategies for short-term management (10 years forward) and long-term management (10-20 years forward) of RECs above the PQR? Please discuss any plans to use RECs above the PQR for future RPS compliance and/or to sell RECs above the PQR.

See PacifiCorp's response to question 6, above. Any RECs above the PQR will be banked and used for future compliance to the extent the RECs are eligible for banking. PacifiCorp has no plans to sell any RECs above the PQR.

C. Voluntary Margin of Over-Procurement (VMOP)

8. Provide VMOP on both a short-term (10 years forward) and long-term (10-20 years forward) basis. This should include a discussion of all risk factors and a quantitative justification for the amount of VMOP.

Due to the restrictions on carrying forward excess RECs from one compliance period to another, PacifiCorp will seek to minimize over-procuring RECs. On February 21, 2013, PacifiCorp filed a Joint Petition for Modification of Decision 12-06-038 to clarify and harmonize the Commission's rules for carrying forward excess procurement to effectuate statutory intent and provide flexibility in PacifiCorp's ability to procure, utilize, and carry forward RECs.[11] However, until that petition is addressed, the current restrictions on carrying forward excess procurement necessitate that PacifiCorp continuously assess its California RPS compliance obligations to minimize its VMOP.

[11] The Joint Petition for Modification of Decision 12-06-038 is available at http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M042/K159/42159935.PDF.

9. Please address the cost-effectiveness of different methods for meeting any projected VMOP procurement need, including application of forecast RECs above the PQR.

See PacifiCorp's response to question 6, above. Currently, it is most cost-effective for PacifiCorp to minimize over-procurement of RECs. Therefore, PacifiCorp currently plans to minimize its VMOP.

D. Cost Effectiveness

10. Are there cost-effective opportunities to use banked RECs above the PQR for future RPS compliance in lieu of additional RPS procurement to meet the RNS?

See PacifiCorp's response to questions 6 and 8, above. Additionally, if the Commission modifies the RPS rules as requested in PacifiCorp's February 21, 2013 Joint Petition for Modification of Decision 12-06-038, PacifiCorp will have additional flexibility and additional opportunities to cost-effectively procure RECs above its PQR and apply such banked RECs in the future. This could help reduce the costs of RPS compliance for PacifiCorp's customers and maximize the value of renewable procurement.

11. How does your current RNS fit within the regulatory limitations for [portfolio content categories] PCCs? Are there opportunities to optimize your portfolio by procuring RECs across different PCCs?

As provided in D.11-12-052, PacifiCorp is "not subject to the requirements and limitations [on] the use of procurement in each portfolio content category."[12] Therefore, for PacifiCorp, there are no "regulatory limitations for [portfolio content categories] PCCs." However, PacifiCorp notes that the current RNS calculation provided in the standardized template should be modified to take into account the excess procurement rules. In addition, the Company has filed a Joint Petition for Modification of Decision 12-06-038 and the excess

[12] D.11-12-052, p. 63; *see also* D.11-12-052, Ordering Paragraph 16.

procurement rules and the RNS calculation should be modified as requested in the petition so that PacifiCorp's ratepayers are not unfairly disadvantaged.

VII. CONCLUSION

For the foregoing reasons, PacifiCorp respectfully submits its 2014 Off-Year Supplement in response to the Ruling.

Respectfully submitted July 15, 2014, at San Francisco, California.

By ______/s/________________________
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VERIFICATION

I am the Senior Vice President of the Commercial and Trading department of the respondent corporation herein, and am authorized to make this verification on its behalf. The statements in the foregoing document are true of my own knowledge, except as to matters which are therein stated on information and belief, and as to those matters I believe them to be true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 15, 2014 at Portland, Oregon.

Stefan Bird
Senior Vice President, Commercial and Trading

ATTACHMENT A

PACIFICORP'S 2014 OFF-YEAR SUPPLEMENT TO ITS 2013 INTEGRATED RESOURCE PLAN

PACIFICORP'S 2014 OFF-YEAR SUPPLEMENT TO ITS 2013 INTEGRATED RESOURCE PLAN

1. Introduction

The following sets forth the supplementary material needed to meet the requirements set forth in Pub. Util. Code § 399.17(d) and the *Assigned Commissioner's Ruling Identifying Issues and Schedule of Review for 2014 Renewables Portfolio Standard Procurement Plans,* issued March 26, 2014 (Ruling). This includes the requirements of § 399.13, § 399.14, and § 399.25. To the extent not included below, the required material is found in PacifiCorp's 2013 integrated resource plan (2013 IRP) and 2013 IRP Update.[13]

2. Transmission Planning

The Company is a member of the Northern Tier Transmission Group (NTTG), the planning entity through which the Company demonstrates compliance with the regional planning requirements of Federal Energy Regulatory Commission (FERC) Order No. 890. NTTG is currently working on the 2014-2015 Biennial Transmission Plan that provides a regional perspective on the incremental transmission required to efficiently meet the growing load and resource needs of the region. The report is based on a roll-up of each NTTG transmission provider's local transmission plan, and generation assumptions including resources necessary to meet all applicable state renewable portfolio standards (RPS), including California's 33%-by-2020 standard. Associated with this is the ongoing regional and interregional development of the Order No. 1000 Attachment K Open Access Transmission Tariff (OATT) filings. PacifiCorp filed its regional compliance filing with the FERC on October 10, 2012 (Regional Filing) and the interregional compliance filing on May 10, 2013 (Interregional Filing) that outlines interregional coordination of transmission plans and cost allocation.[14] On May 17, 2013 the FERC issued an order partially approving PacifiCorp's Regional Filing and requiring further modification of

[13] The 2013 IRP was filed in this docket on April 30, 2013 and is also available on PacifiCorp's website at: http://www.pacificorp.com/es/irp.html. The 2013 IRP Update was published on March 31, 2014 and is available at the same link.
[14] FERC Docket No.s ER13-64 and ER13-1449, respectively.

Attachment K of its OATT within sixty days of the issuance of the order. On September 16, 2013, PacifiCorp submitted the compliance filing including the required modifications. On April 17, 2014, the FERC issued an order accepting the OATT revisions in part and requiring further modification and a compliance filing due within sixty days of the issuance of the order. On June 13, 2014 PacifiCorp submitted the compliance filing addressing the April 17, 2014 order. An order has not yet been issued in response to PacifiCorp's latest Interregional Filing.

PacifiCorp's Energy Gateway transmission projects, included in the Company's 2013 IRP, in NTTG's regional transmission plan and in the Western Electricity Coordinating Council's (WECC) 2024 long-term ten-year transmission plan, play an important role in the Company's commitment to provide safe, reliable, reasonably priced electricity to meet the needs of customers. Energy Gateway's design and extensive footprint provides needed system reliability improvements and supports the development of a diverse range of cost-effective resources required for meeting customers' energy needs, including needs driven by California and other states' RPS requirements.

The first major segment of Energy Gateway – Populus to Terminal – was placed into service in November 2010, and the second major segment – Mona to Oquirrh – was placed into service in May 2013. The federal permit for Sigurd to Red Butte was issued December 7, 2012, the Certificate of Public Convenience and Necessity was issued by the Utah Public Service Commission on March 15, 2013 and construction activities began in April 2013 with a projected completion date of June 2015. Outreach, siting and permitting processes continue for additional transmission segments, including Gateway West and Gateway South. On April 26, 2013, the Bureau of Land Management published the Final Environmental Impact Statement for the Gateway West project in the Federal Register and a record of decision was issued November 2013 for eight of the ten segments. A record of decision on the remaining two segments across Idaho is anticipated in late 2015. On February 21, 2014, the Bureau of Land Management published the Draft Environmental Impact Statement for Gateway South. The Energy Gateway projects are necessary to reliably move network resources to network loads as described in PacifiCorp's 2013 IRP. See Chapters 4 and 6 of PacifiCorp's 2013 IRP Update, for detailed background, status and schedule information for the Energy Gateway expansion plan.

3. RPS Portfolio Assessment

Detailed information regarding PacifiCorp's modeling and resource portfolio assessment process is found in Chapters 5 through 8 of the 2013 IRP and Chapters 3 through 5 of the 2013 IRP Update. In order to develop the optimal mix of renewable energy, PacifiCorp includes a variety of RPS-compliant resources in a capacity expansion optimization model. These include wind, geothermal, biomass (utility scale and distributed generation facilities), and several solar technologies. Each eligible renewable resource is assigned a capacity planning factor representing the percentage of installed capacity assumed to be available to serve annual peak loads. The capacity expansion optimization model accounts for the capacity planning factor in determining the least-cost portfolio that meets capacity and energy requirements and other optimization constraints. Incremental transmission and interconnection costs, as well as system integration costs for wind, are factored into the resource characterizations. As a base assumption, the federal renewable production tax credit expires December 31, 2014, although PacifiCorp conducted a sensitivity analysis to determine the resource selection impact of an extension through 2019. The Action Plan in the 2013 IRP was not changed in the 2013 IRP Update. As such, the strategy to meet the renewable requirements in California has not changed from the 2013 IRP.

As discussed in the 2013 IRP Update, (p. 70), the Company issued a request for proposal (RFP) for California-eligible RECs to meet California RPS compliance on March 14, 2014. Because PacifiCorp is not subject to the RPS portfolio content category limitations, PacifiCorp is not limited with regard to the quantity of unbundled RECs that may be used to satisfy PacifiCorp's compliance obligations. The Company will continue to issue RFPs seeking unbundled RECs at least annually to help meet its California RPS procurement requirements. For these unbundled REC RFPs, PacifiCorp plans to utilize its Pro Forma Renewable Energy Credit Purchase and Sale Agreement that was submitted as part of its Final and Amended 2013 Integrated Resource Plan On-Year Supplement in accordance with D.13-11-024.[15]

[15] *See* PacifiCorp's Final and Amended 2013 Integrated Resource Plan On-Year Supplement, Attachment C, available at http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M084/K331/84331889.PDF.

4. Resource Development Status Update

Table 2 provides a status update on the development schedule of resources reported in the 2013 IRP On-Year Supplement filed in May 2013 and summarizes the status of current projects that were recently executed, are operational, and where PacifiCorp receives the energy and the RECs as well as current contracts that are in development or currently under construction. Currently, all of the projects under contract but not yet generating are between PacifiCorp and qualifying facilities (QFs) under the Public Utility Regulatory Policies Act (PURPA).

Table 2: QF Contracts

Technology Type	State	Estimated Annual Production (MWhs)	Estimated Commercial Operation Date	Status
Hydro	ID	3,210	August 2014	Contract executed – project under construction
Wind	UT	249,700	November 2015	Contract executed – project under construction
Wind	UT	177,779	May 2015	Contract executed – project under construction
Wind	WY	281,500	June 2016	Contract executed – project under construction

In addition to the above-listed projects, PacifiCorp plans to procure and use unbundled RECs for California RPS compliance as needed, consistent with the conditions set forth in Decision (D.) 11-01-025. In 2012, PacifiCorp did not issue a RFP to solicit bids for the purchase of unbundled RECs to meet PacifiCorp's California RPS compliance obligations due to absence of near-term need because the Company executed a new QF agreement in April 2012. This QF agreement was for the purchase of energy and RECs from a qualified renewable energy resource through June 2018. Consistent with the 2013 IRP, the Company plans to issue, on a minimum annual basis, RFPs to solicit offers of unbundled RECs eligible for California RPS compliance (see Chapter 9 Action Plan p. 243).

PacifiCorp will issue an RFP seeking proposals from parties interested in providing firm RECs that qualify for compliance with the California RPS. PacifiCorp's goal in issuing the RFP is to acquire unbundled RECs at competitive prices to enable PacifiCorp to meet its RPS requirement.

Offers to PacifiCorp must include RECs that are sourced from facilities already certified as RPS-eligible by the California Energy Commission (CEC), tracked in the Western Renewable Energy Generation Information System (WREGIS) and generated in the WECC territory.

PacifiCorp will evaluate bids based on assessment of the merits of proposals with regard to meeting its need. Each proposal will be evaluated based on its compliance with the RFP and according to the following information:

- REC Price
- REC Quantity
- Firm offer to sell RECs
- REC Delivery Term of proposed contract
- WREGIS account holder status
- Financial viability of Bidder
- Reliability of REC supply and delivery
- CEC certification for the generation facility(ies)
- References/experience

All proposals will be required to be delivered within 10 business days of RFP issuance date. Within 10 business days of receipt of all RFP proposals, PacifiCorp will complete evaluation and selection, if any, and commence contract negotiations. As described above, PacifiCorp will utilize the same Pro Forma Renewable Energy Credit Purchase and Sale Agreement that was submitted as part of its Final and Amended 2013 Integrated Resource Plan On-Year Supplement in accordance with D.13-11-024.

5. Potential Compliance Delays – Risk of Failure to Build or of Construction Delay

PacifiCorp does not anticipate significant potential compliance delays. Because the renewable portfolio product content category limitations do not apply to PacifiCorp, PacifiCorp may meet any California RPS compliance shortfall by purchasing unbundled RECs. As such, the single most significant potential compliance delay has to do with the viability of the unbundled REC market in the western region. PacifiCorp's assessment of the viability of the market has led PacifiCorp to believe that it is likely that the Company will be able to purchase sufficient unbundled RECs to cover its California RPS compliance obligations through at least 2022. Therefore, other potential compliance delays such as transmission availability and other factors associated with purchased or constructed and owned eligible renewable resources are unlikely to have a significant impact on PacifiCorp's net short position.

This is also true with respect to compliance delays caused by failure to build or construction delays. However, these risks are included in PacifiCorp's resource acquisition and procurement decision process. This, in addition to PacifiCorp's previously discussed ability to procure unbundled RECs, significantly reduces the risk of failure to build or construction delay and the impact of such to affect PacifiCorp's net short position. If PacifiCorp does not receive sufficient market depth to fulfill its compliance requirements with unbundled RECs then PacifiCorp would consider issuing an additional RFP for renewable resources to fulfill its compliance requirement in California.

6. Quantitative Analysis and Renewable Net Short Position

In its 2013 IRP, PacifiCorp analyzed its RPS compliance position for all states with an RPS program, including California. See Volume I, Chapter 7 (p. 186-187) and Volume I, Chapter 8 (p. 232) of the 2013 IRP. The 2013 IRP Update contains current expectations for RPS compliance. See Volume I, Chapter 5 (pp. 47-50).

The May 21, 2014 *Administrative Law Judge's Ruling on Renewable Net Short* (RNS Ruling) requires PacifiCorp to provide a renewable net short (RNS) calculation using a standardized reporting template. As described in PacifiCorp's comments filed on March 12, 2014, many of the inputs and assumptions used in the standardized template are tailored to California's three largest investor owned utilities (IOUs) and use inputs that are not applicable to PacifiCorp.[16] PacifiCorp's state RPS analysis in its IRP and IRP Updates is more reflective of PacifiCorp's RPS compliance position.

[16] *See* PacifiCorp's March 12, 2014 comments, available at http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M089/K136/89136086.PDF.

Despite the fact that many of the inputs and assumptions in the standardized template do not apply to PacifiCorp, PacifiCorp has included the RNS calculations using the standardized reporting template included in the RNS Ruling, attached hereto as Attachment B. As instructed by Commission staff, PacifiCorp has populated the template to best of its ability based on PacifiCorp's IRP, IRP Update, and other internal estimates. In accordance with the RNS Ruling, PacifiCorp is providing a physical RNS calculation and an optimized RNS calculation.

As discussed above, PacifiCorp proposes to meet its near and long-term needs through the purchase of unbundled RECs, as needed. As discussed in prior sections of Attachment A, PacifiCorp does not anticipate significant risks associated with its ability to achieve the required compliance targets. PacifiCorp continues to reassess its California compliance need and strategy on an ongoing basis.

7. Application to Construct, Own and Operate Eligible Renewable Resource

Section 399.14 sets forth the requirements for an application by an electrical corporation to construct, own, and operate an eligible renewable energy resource. PacifiCorp is only required to follow these requirements to the extent it intends to allocate one hundred percent of the resource to its California customers. See SMJU Decision D.08-05-029 Section 3.4.2.1.3. In the event PacifiCorp is required to set forth such an application, it will comply with the requirements set out in § 399.14.

8. California Energy Commission Certification

Section 399.25 directs the CEC to certify eligible renewable resources and design a system for tracking and verifying renewable energy and renewable energy credits. PacifiCorp is using CEC certified renewable resources to meet its RPS requirement for the California RPS program. PacifiCorp participates in WREGIS to track the renewable energy and RECs that it uses for the California RPS program.

ATTACHMENT B

RENEWABLE NET SHORT

Row	Variable	Calculation	Item	Deficit from RPS prior to Reporting Year	2011 Actuals	2012 Actuals	2013 Actuals	**2011-2013**	2014 Forecast	2015 Forecast	2016 Forecast	**2014-2016**	2017 Forecast	2018 Forecast	2019 Forecast	2020 Forecast	**2017-2020**
4			Forecast Year		-	-	-	CP1	-	-	-	CP2	-	-	-	-	CP3
5																	
6	A		Bundled Retail Sales Forecast (LTPP)		**809**	**783**	**795**	**2,386**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**764**	**764**	**764**	[redacted]
7	B		RPS Procurement Quantity Requirement (%)		0.2	20.0%	20.0%	20.0%	21.7%	23.3%	25.0%	23.3%	27.0%	29.0%	31.0%	33.0%	33.0%
8	C	A*B	**Gross RPS Procurement Quantity Requirement (GWh)**		**162**	**157**	**159**	**477**	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**222**	**237**	**252**	[redacted]
9	D		Voluntary Margin of Over-procurement					-				-					-
10	E	C+D	**Net RPS Procurement Need (GWh)**					477				[redacted]					[redacted]
11																	
12	Fa		Risk-Adjusted RECs from Online Generation		*190*	*158*	*130*	**477**	*157*	*154*	*154*	**466**	*153*	*136*	*113*	*105*	**507**
13	Faa		Forecast Failure Rate for Online Generation (%)					-				-					-
14	Fb		Risk-Adjusted RECs from RPS Facilities in Development					-	-	-	*2*	**2**	*4*	*4*	*4*	*4*	**17**
15	Fbb		Forecast Failure Rate for RPS Facilities in Development (%)					-				-					-
16	Fc		Pre-Approved Generic RECs					-				-					-
17	Fd		Executed REC Sales					-				-					-
18	F	Fa + Fb +Fc - Fd	Total RPS Eligible Procurement (GWh)		**190**	**158**	**130**	**477**	**157**	**154**	**156**	**468**	**157**	**141**	**118**	**109**	**524**
19	F0		Category 0 RECs		*150*	*119*	*82*	**351**	*131*	*128*	*128*	**387**	*126*	*125*	*113*	*105*	**470**
20	F1		Category 1 RECs					-				-					-
21	F2		Category 2 RECs					-				-					-
22	F3		Category 3 RECs		*40*	*39*	*48*	**126**	*26*	*26*	*28*	**81**	*31*	*15*	*4*	*4*	**54**
23																	
24	Ga	F-E	**Annual Gross RPS Position (GWh)**					**0**				[redacted]					[redacted]
25	Gb	F/A	**Annual Gross RPS Position (%)**					**20%**				[redacted]					[redacted]
26																	
27	Ha	H - Hc (from previous year)	Existing Banked RECs above the PQR		*28*			**28**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**
28	Hb		RECs above the PQR added to Bank				*22*	**22**									
29	Hc		Non-bankable RECs above the PQR					-									
30	H	Ha+Hb	Gross Balance of RECs above the PQR					**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**
31	Ia		Planned Application of RECs above the PQR towards RPS Compliance		[redacted]												
32	Ib		Planned Sales of RECs above the PQR														
33	J	H-Ia-Ib	Net Balance of RECs above the PQR														
34	J0		Category 0 RECs														
35	J1		Category 1 RECs														
36	J2		Category 2 RECs														
37	J3		Category 3 RECs														
38																	
39	K		RECs from Expiring RPS Contracts		-	2	2	-	2	3	3	-	3	3	55	55	-
40																	
41	La	Ga + Ia – Ib – Hc	**Annual Net RPS Position after Bank Optimization (GWh)**		[redacted]												
42	Lb	(F + Ia – Ib – Hc)/A	**Annual Net RPS Position after Bank Optimization (%)**														

43 Note: Fields in grey are potected as Confidential under CPUC Confidentiality Rules

44 Note: Values are shown in GWhs

45 Note:

Row	Variable	Item	Comment
46	Variable A:	Bundled Retail Sales Forecast (LTPP)	PacifiCorp does not participate in the LTPP. PacifiCorp retail sales forecast is based on PacifiCorp's 2013 IRP Update.
47	Variable Fa:	Risk-Adjusted RECs from Online Generation	Renewable energy generation forecast is based on PacifiCorp's 2013 IRP Update and has been adjusted to exclude contract extensions beyond the contract expiration date.
48	Variable Fb:	Risk-Adjusted RECs from RPS Facilities in Development	Includes system power purchase agreements executed as of June 1, 2014.
49	Variable K:	RECs from Expiring RPS Contracts	RECS from Expiring RPS Contracts is based on PacifiCorp's 2013 Preliminary Annual 33% RPS Compliance Report and include contracts expiring prior to 2020.
50	General comment		Procurement shown represents amount allocated to California. Forecast subject to change as allocations are based on dynamic allocation factors.

	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF
1													
2													
3	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast	2028 Forecast	2029 Forecast	2030 Forecast	2031 Forecast	2032 Forecast	2033 Forecast
4	-	-	-	-	-	-	-	-	-	-	-	-	-
5	[redacted]												
6	**761**	**760**	**760**	**763**	**760**	**759**	**758**	**761**	**761**	**762**	**763**	**767**	**767**
7	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%
8	**251**	**251**	**251**	**252**	**251**	**250**	**250**	**251**	**251**	**252**	**252**	**253**	**253**
9	-	-	-	-	-	-	-	-	-	-	-	-	-
10	251	251	251	252	251	250	250	251	251	252	252	253	253
11	[redacted]												
12	*83*	*85*	*85*	*81*	*77*	*74*	*73*	*73*	*72*	*67*	*59*	*50*	*40*
13													
14	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*
15													
16													
17													
18	**87**	**90**	**89**	**85**	**81**	**77**	**77**	**77**	**76**	**71**	**62**	**53**	**44**
19	*83*	*80*	*80*	*76*	*72*	*69*	*68*	*68*	*67*	*63*	*54*	*45*	*40*
20													
21													
22	*4*	*9*	*9*	*9*	*9*	*8*	*8*	*8*	*8*	*8*	*8*	*8*	*4*
23	[redacted]												
24	(164)	(161)	(162)	(167)	(170)	(173)	(173)	(175)	(175)	(181)	(190)	(200)	(209)
25	11%	12%	12%	11%	11%	10%	10%	10%	10%	9%	8%	7%	6%
26	[redacted]												
27	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**
28													
29													
30	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**
31	[redacted]												
32													
33													
34													
35													
36													
37													
38													
39	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**
40	[redacted]												
41													
42													
43													
44													
45													
46													
47													
48													
49													
50													

Attachment B - Renewable Net Short

Facility Name	Technology	Contract Expiration Date	MW	Expected Annual Generation (GWh)	Location	PCC Classification
Ralphs Ranch	Conduit Hydro	12/31/2012	0.1	215	Siskiyou County, CA	PCC0
Dillard Cogeneration Facility	Biomass	7/31/2011	Up to 20	153,792	Douglas County, OR	PCC0
Chevron Casper Wind Farm	Wind	12/31/2014	16.5	45,960	Natrona County	PCC0
Gro Pro	Biomass	12/31/2015	0.0	42	Siskiyou County, CA	PCC3
J Bar 9 Ranch	Wind	10/31/2016	0.1	136	Park County, WY	PCC3
Weed Generator Project	Wind	6/30/2018	10.0	26,280	Siskiyou County, CA	PCC3
Luckey, Paul	Conduit Hydro	12/31/2018	0.05	282	Siskiyou County, CA	PCC0
Slate Creek	Small Hydro	12/31/2018	4.2	15,151	Shasta County, CA	PCC0

ATTACHMENT C

COST QUANTIFICATION TABLES

Joint IOU Assumption Guidelines for Table Input	
Table 1 (Actual Costs, $) Items	**Actual**
Rows 2 – 8, 11 (2003-2013)	Settlements data from 1/1/2003 to 12/31/2013
Row 9	Annualized capital cost plus applicable O&M in each year
Row 10	LCOE multiplied by actual generation in each year
Row 13	Actual bundled retail sales data reported to the CEC through the annual RPS track forms and the CPUC through the semi-annual RPS compliance report
Row 14	Total Cost / Bundled Retail Sales
Table 2 (Forecast Cost, $) Items	**Forecast**
Rows 2 -11 and 16-25	Forecast begins on 1/1/2014 • UOG Small Hydro is annualized capital cost plus 2012 O&M escalated at 5% annually • UOG Solar is LCOE multiplied by actual generation in each year
Rows 13 and 27	IOU's most current bundled retail sales forecast
Rows 14 and 28	Total Cost / Bundled Retail Sales
Table 3 (Actual Generation, MWh) Items	**Actual**
Rows 2 – 11 (2003-2013)	Settlements data from 1/1/2003 to 12/31/2013
Table 4 (Forecast Generation, MWh) Items	**Forecast**
Rows 2 -11 and 16-25	Forecast begins on 1/1/2014 • Caluclated as forecasted generation in each year

Cost Quantification Table 1 (Actual Costs, $ Thousands)

		Actual RPS-Eligible Procurement and Generation Costs (Note 1)										
1	**Technology Type**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
2	Biogas	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Biomass	$0	$0	$0	$71	$159	$139	$162	$163	$88	$0	$0
4	Geothermal	$209	$214	$200	$215	$310	$275	$233	$283	$233	$232	$247
5	Small Hydro	$3,392	$2,780	$3,273	$3,716	$1,640	$2,004	$2,355	$4,139	$4,565	$2,702	$2,000
6	Solar PV	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Solar Thermal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Wind	$158	$158	$0	$184	$857	$1,312	$3,523	$4,722	$7,136	$6,879	$6,872
9	UOG Small Hydro	$551	$617	$648	$763	$555	$645	$666	$649	$1,117	$868	$734
10	UOG Solar	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Unbundled RECs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	**Total CPUC-Approved RPS-Eligible Procurement and Generation Cost** [Sum of Rows 2 through 11]	**$4,310**	**$3,769**	**$4,121**	**$4,950**	**$3,521**	**$4,375**	**$6,939**	**$9,955**	**$13,140**	**$10,680**	**$9,852**
13	Bundled Retail Sales (Thousands of kWh)	**834,702**	**841,819**	**836,674**	**851,205**	**884,865**	**882,854**	**848,226**	**830,645**	**808,648**	**782,661**	**794,834**
14	**Incremental Rate Impact**	**0.52 ¢/kWh**	**0.45 ¢/kWh**	**0.49 ¢/kWh**	**0.58 ¢/kWh**	**0.40 ¢/kWh**	**0.50 ¢/kWh**	**0.82 ¢/kWh**	**1.20 ¢/kWh**	**1.62 ¢/kWh**	**1.36 ¢/kWh**	**1.24 ¢/kWh**

Cost Quantification Table 2 (Forecast Costs, $ Thousands)

		Forecasted Future Expenditures on RPS-Eligible Procurement and Generation Costs (2014-2022)								
1	**Executed But Not CPUC-Approved RPS-Eligible Contracts**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
2	Biogas	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Biomass	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Geothermal	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Small Hydro	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Solar PV	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Solar Thermal	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Wind	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	UOG Small Hydro	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	UOG Solar	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Unbundled RECs	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	**Total Executed But Not CPUC-Approved RPS-Eligible Procurement and Generation Cost** [Sum of Rows 2 through 11]	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
13	Bundled Retail Sales (Thousands of kWh)	1	1	1	1	1	1	1	1	1
14	**Incremental Rate Impact**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**
15	**CPUC-Approved RPS-Eligible Contracts**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
16	Biogas	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Biomass	$0	$0	$0	$0	$0	$0	$0	$0	$0
18	Geothermal	$0	$0	$0	$0	$0	$0	$0	$0	$0
19	Small Hydro	$3,989	$4,127	$4,295	$4,433	$4,589	$3,181	$3,301	$38	$40
20	Solar PV	$0	$0	$0	$0	$0	$0	$0	$0	$0
21	Solar Thermal	$0	$0	$0	$0	$0	$0	$0	$0	$0
22	Wind	$3,585	$3,587	$3,733	$3,859	$2,598	$1,664	$1,642	$1,630	$1,985
23	UOG Small Hydro	$0	$0	$0	$0	$0	$0	$0	$0	$0
24	UOG Solar	$0	$0	$0	$0	$0	$0	$0	$0	$0
25	Unbundled RECs	$0	$0	$0	$0	$0	$0	$0	$0	$0
26	**Total CPUC-Approved RPS-Eligible Procurement and Generation Cost** [Sum of Rows 16 through 25]	**$7,574**	**$7,714**	**$8,028**	**$8,291**	**$7,187**	**$4,844**	**$4,943**	**$1,668**	**$2,025**
27	Bundled Retail Sales (Thousands of kWh)	769,597	767,691	768,813	765,290	764,323	763,662	763,991	760,844	760,086
28	**Incremental Rate Impact**	**0.98 ¢/kWh**	**1.00 ¢/kWh**	**1.04 ¢/kWh**	**1.08 ¢/kWh**	**0.94 ¢/kWh**	**0.63 ¢/kWh**	**0.65 ¢/kWh**	**0.22 ¢/kWh**	**0.27 ¢/kWh**
29	**Total Incremental Rate Impact** [Row 14 + 28; Rounding can cause Row 29 to differ slightly from the sum of Row 14 and 28]	**0.98 ¢/kWh**	**1.00 ¢/kWh**	**1.04 ¢/kWh**	**1.08 ¢/kWh**	**0.94 ¢/kWh**	**0.63 ¢/kWh**	**0.65 ¢/kWh**	**0.22 ¢/kWh**	**0.27 ¢/kWh**

Cost Quantification Table 2 (continued) (Forecast Costs, $ Thousands)

		Forecasted Future Expenditures on RPS-Eligible Procurement and Generation Costs (2023-2030)							
1	**Executed But Not CPUC-Approved RPS-Eligible Contracts**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
2	Biogas	$0	$0	$0	$0	$0	$0	$0	$0
3	Biomass	$0	$0	$0	$0	$0	$0	$0	$0
4	Geothermal	$0	$0	$0	$0	$0	$0	$0	$0
5	Small Hydro	$0	$0	$0	$0	$0	$0	$0	$0
6	Solar PV	$0	$0	$0	$0	$0	$0	$0	$0
7	Solar Thermal	$0	$0	$0	$0	$0	$0	$0	$0
8	Wind	$0	$0	$0	$0	$0	$0	$0	$0
9	UOG Small Hydro	$0	$0	$0	$0	$0	$0	$0	$0
10	UOG Solar	$0	$0	$0	$0	$0	$0	$0	$0
11	Unbundled RECs	$0	$0	$0	$0	$0	$0	$0	$0
12	**Total Executed But Not CPUC-Approved RPS-Eligible Procurement and Generation Cost** [Sum of Rows 2 through 11]	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
13	Bundled Retail Sales (Thousands of kWh)	1	1	1	1	1	1	1	1
14	**Incremental Rate Impact**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**	**0.00 ¢/kWh**
15	**CPUC-Approved RPS-Eligible Contracts**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
16	Biogas	$0	$0	$0	$0	$0	$0	$0	$0
17	Biomass	$0	$0	$0	$0	$0	$0	$0	$0
18	Geothermal	$0	$0	$0	$0	$0	$0	$0	$0
19	Small Hydro	$41	$42	$43	$44	$46	$47	$49	$50
20	Solar PV	$0	$0	$0	$0	$0	$0	$0	$0
21	Solar Thermal	$0	$0	$0	$0	$0	$0	$0	$0
22	Wind	$1,984	$1,918	$1,902	$1,740	$1,738	$1,749	$1,754	$1,491
23	UOG Small Hydro	$0	$0	$0	$0	$0	$0	$0	$0
24	UOG Solar	$0	$0	$0	$0	$0	$0	$0	$0
25	Unbundled RECs	$0	$0	$0	$0	$0	$0	$0	$0
26	**Total CPUC-Approved RPS-Eligible Procurement and Generation Cost** [Sum of Rows 16 through 25]	**$2,024**	**$1,960**	**$1,945**	**$1,785**	**$1,784**	**$1,796**	**$1,802**	**$1,541**
27	Bundled Retail Sales (Thousands of kWh)	760,400	762,639	760,403	758,960	757,964	761,032	760,673	762,464
28	**Incremental Rate Impact**	**0.27 ¢/kWh**	**0.26 ¢/kWh**	**0.26 ¢/kWh**	**0.24 ¢/kWh**	**0.24 ¢/kWh**	**0.24 ¢/kWh**	**0.24 ¢/kWh**	**0.20 ¢/kWh**
29	**Total Incremental Rate Impact** [Row 14 + 28; Rounding can cause Row 29 to differ slightly from the sum of Row 14 and 28]	**0.27 ¢/kWh**	**0.26 ¢/kWh**	**0.26 ¢/kWh**	**0.24 ¢/kWh**	**0.24 ¢/kWh**	**0.24 ¢/kWh**	**0.24 ¢/kWh**	**0.20 ¢/kWh**

Note 1: In a limited number of instances, some numbers are based on estimates.

Cost Quantification Table 3 (Actual Generation, MWh)

		Actual RPS-Eligible Procurement and Generation (kWh)										
1	**Technology Type**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
2	Biogas	0	0	0	0	0	0	0	0	0	0	0
3	Biomass	0	0	0	1,251	2,791	2,426	2,843	2,851	1,533	0	0
4	Geothermal	3,641	3,729	3,473	3,502	3,019	4,461	4,850	4,639	4,522	4,301	3,823
5	Small Hydro	38,890	31,356	35,993	39,356	17,273	20,421	23,946	39,395	41,770	24,909	17,561
6	Solar PV	0	0	0	0	0	0	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0	0	0	0	0	0	0
8	Wind	3,965	3,939	0	4,062	14,672	20,157	41,860	61,792	122,486	113,922	119,874
9	UOG Small Hydro	18,805	18,300	19,061	23,542	18,377	18,561	17,815	15,323	19,572	14,418	10,751
10	UOG Solar	0	0	0	0	0	0	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0	0	0	0	0	0	0
12	**Total CPUC-Approved RPS-Eligible Procurement and Generation** [Sum of Rows 2 through 11]	65,301	57,324	58,527	71,712	56,132	66,025	91,315	124,000	189,883	157,550	152,009

Joint IOU Cost Quantification Table 4 (Forecast Generation, MWh)

		Forecasted Future RPS-Deliveries 2013-2022 (MWh)								
1	**Executed But Not CPUC-Approved RPS-Eligible Contracts**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
2	Biogas	0	0	0	0	0	0	0	0	0
3	Biomass	0	0	0	0	0	0	0	0	0
4	Geothermal	0	0	0	0	0	0	0	0	0
5	Small Hydro	0	0	0	0	0	0	0	0	0
6	Solar PV	0	0	0	0	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0	0	0	0	0
8	Wind	0	0	0	0	0	0	0	0	0
9	UOG Small Hydro	0	0	0	0	0	0	0	0	0
10	UOG Solar	0	0	0	0	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0	0	0	0	0
12	**Total Executed But Not CPUC-Approved RPS-Eligible Deliveries** [Sum of Rows 2 through 11]	0	0	0	0	0	0	0	0	0
15	**CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
16	Biogas	0	0	0	0	0	0	0	0	0
17	Biomass	0	0	0	0	0	0	0	0	0
18	Geothermal	4,680	4,595	4,483	4,518	4,471	4,451	4,351	4,313	4,284
19	Small Hydro	33,682	33,683	33,825	33,686	33,686	22,028	22,028	1,093	1,093
20	Solar PV	0	0	0	0	0	0	0	0	0
21	Solar Thermal	0	0	0	0	0	0	0	0	0
22	Wind	102,339	100,612	102,677	103,699	87,486	76,269	74,758	74,111	76,466
23	UOG Small Hydro	16,222	15,532	15,454	15,010	14,995	14,870	8,105	7,774	7,702
24	UOG Solar	0	0	0	0	0	0	0	0	0
25	Unbundled RECs	0	0	0	0	0	0	0	0	0
26	**Total CPUC-Approved RPS-Eligible Deliveries** [Sum of Rows 16 through 25]	156,924	154,422	156,438	156,914	140,639	117,618	109,241	87,290	89,544

Joint IOU Cost Quantification Table 4 (continued) (Forecast Generation, MWh)

		Forecasted Future RPS-Deliveries 2023-2030 (MWh)							
1	**Executed But Not CPUC-Approved RPS-Eligible Contracts**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
2	Biogas	0	0	0	0	0	0	0	0
3	Biomass	0	0	0	0	0	0	0	0
4	Geothermal	0	0	0	0	0	0	0	0
5	Small Hydro	0	0	0	0	0	0	0	0
6	Solar PV	0	0	0	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0	0	0	0
8	Wind	0	0	0	0	0	0	0	0
9	UOG Small Hydro	0	0	0	0	0	0	0	0
10	UOG Solar	0	0	0	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0	0	0	0
12	**Total Executed But Not CPUC-Approved RPS-Eligible Deliveries** [Sum of Rows 2 through 11	0	0	0	0	0	0	0	0
15	**CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
16	Biogas	0	0	0	0	0	0	0	0
17	Biomass	0	0	0	0	0	0	0	0
18	Geothermal	4,241	4,061	3,988	3,942	3,905	3,895	3,873	3,857
19	Small Hydro	1,093	1,093	1,093	1,093	1,093	1,093	1,093	1,093
20	Solar PV	0	0	0	0	0	0	0	0
21	Solar Thermal	0	0	0	0	0	0	0	0
22	Wind	75,709	72,489	69,919	66,740	66,117	65,958	65,569	61,053
23	UOG Small Hydro	7,534	7,203	6,003	5,635	5,578	5,562	5,077	5,056
24	UOG Solar	0	0	0	0	0	0	0	0
25	Unbundled RECs	0	0	0	0	0	0	0	0
26	**Total CPUC-Approved RPS-Eligible Deliveries** [Sum of Rows 16 through 25	88,577	84,846	81,003	77,410	76,693	76,508	75,612	71,060